

Title (en)  
Aerosol measurement by dilution and particle counting

Title (de)  
Aerosol-Messung durch Verdünnung und Partikelzählen

Title (fr)  
Mesure d'aérosols par dilution et comptage de particules

Publication  
**EP 1757921 A3 20150429 (EN)**

Application  
**EP 06119195 A 20060818**

Priority  
US 21137605 A 20050825

Abstract (en)  
[origin: EP1757921A2] The present invention includes an apparatus for aerosol measurement having a high concentration of particles the apparatus comprising a diluter for diluting the concentration of particles in a sample aerosol stream to form a diluted aerosol stream, and a sensor for detecting the particles in the diluted aerosol stream by vapor condensation, droplet growth and optical detection. Such apparatus may be housed in a common housing along with the electronics for operating the apparatus and components such as pumps and filters that may be necessary. The diluter includes an input for an aerosol stream having an initial particle concentration, and a dilution stream. The aerosol stream and the dilution stream flow through a restriction which is sized such that turbulent flow is created so that the dilution stream and the aerosol stream are mixed to produce a diluted aerosol stream. The dilution stream is formed by drawing a portion from the diluted aerosol stream, filtering the portion to produce clean air that is mixed with the aerosol stream upstream from the restriction.

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